



Sustainable Communities: *A Gateway Technology for Restoring our Forests, Watersheds & Economies*

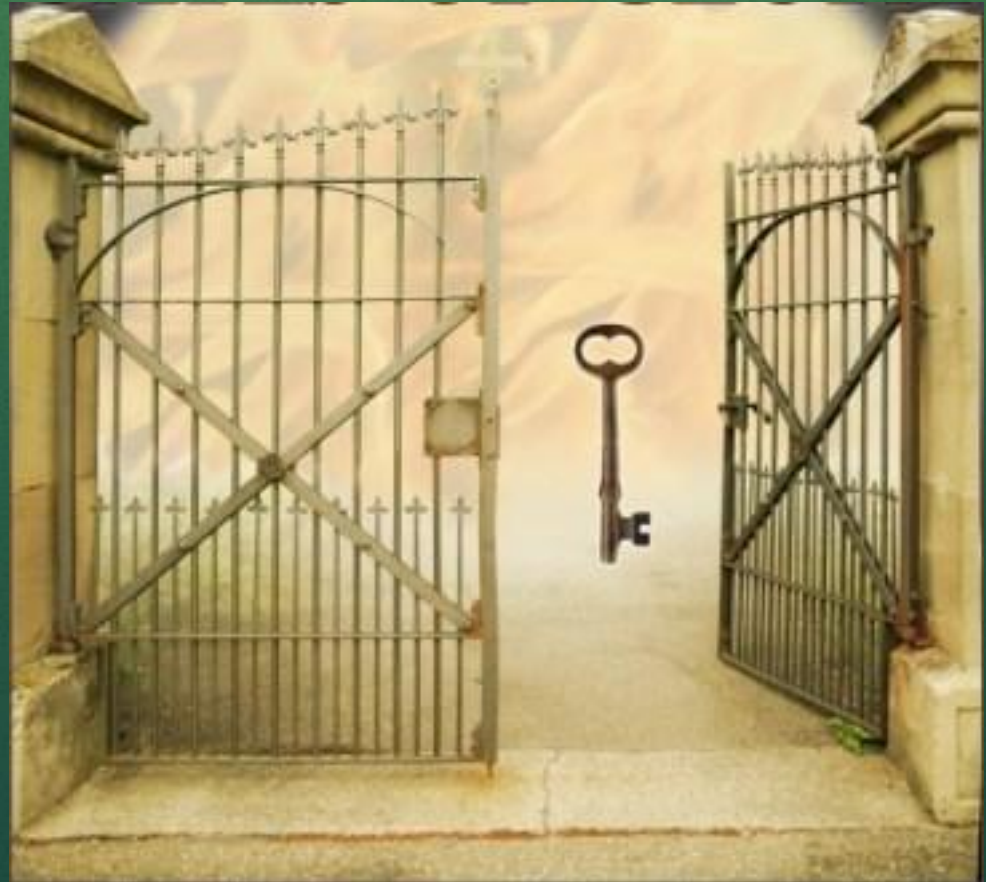
Rep. Carl Trujillo

Science, Technology & Telecommunications Interim Committee

Presented by Margo Covington, Executive Director,
Sustainable Communities, ZERI NM, Inc., a NM 501(c)3

Gateway Technology

- Opens up the use of **many recently commercialized** bio-energy technologies.
- This presentation adapted from that presented at NMED's Infrastructure Finance Conference, October 24th, 2013



We have a vision...

- Of New Mexicans... quickly restoring our forests..
- Watersheds are Revitalized
- Forest Fire-Ready Communities
- Small to medium energy nodes – electricity, heating & refrigeration, in neighborhoods, state buildings, property owners, etc. etc.
- Bio-based Energy Industry Sector
- Transforming **local** economies.... TAXES to PROFITS and JOBS

Imagine...January 2015

- You're a forest resource manager holding a smart phone in your hand with a free app as you walk through a forest or watershed that you must find fire and water solutions for....
- After 100 – 150 years of forest fire suppression... foresters tell us... the trees are like matchsticks... WAY too many trees per acre... 40-70 / 1,000-4,000!
- App receives satellite imagery estimates of forest slash available to thin...
- Including when to stop thinning...
- Based on the 18 NM Forest **Restoration** Principles...

Free App... and... wood slash...

- What will you do with all those limbs, branches, trees, and leaves?
 - Burn them? And ... Maybe starting another catastrophic forest fire...like Las Conchas?
- OR....
- Support the creation of high value economic development, jobs, entrepreneurship in your region?

Any business or industry must have a reliable supply chain..

- Foresters wave their arm at the mountain view and say “there’s more than enough wood out there.”
- The very first question that energy developers and financial institutions ask... “prove to me that there is enough wood available for 20 to 30 years.”
- This Gateway Technology will provide that missing information.

Management Decisions...

- **Cost of bone dry wood per ton...**
- Quantity: Tons of Bone dry wood per acre
- Quality: Which kind of wood... 6 types of forests in NM... different chemistry / characteristics of woods...
- Site what operation where? (slope, electric lines, etc.)
- Ownership of forested land (Federal, State, Private, etc.)
- Rights of Way / Roads / Access
- Time frame of thinning... to **restoration** of forest...
- Which energy technology is most feasible
- For a profitable business plan....

“Take it to the bank...”

- Users are able to identify within **reasonable certainty** how much of the forest (woody biomass) must be cleared to **restore** the forests and watersheds
- Banker, financial institution, or grantor has **enough certainty** of the amount of wood **slash** or **woody biomass** is available for 20 – 30 years to loan or grant you money
- Must speak to **their level of certainty AND time frame.**
Very different from current conversations.
- Expensive to do an assessment with current “ground truthing” technologies. Deep pocket companies are automatically favored.



Move us Faster from Catastrophic
Forest Fires

to
Forest Fire-Ready Communities!

URGENCY - Concerns

- The wildfires are burning our watersheds at a landscape scale, but we're not addressing the problem at a landscape scale... not even close.
- From a watershed perspective:
 - Las Conchas Fire burned 40,000 acres in ONE DAY, and yet statewide we treat about 12,000 acres a year.
 - This last summer 2013 - Three of NM's 5 major rivers (Pecos, Rio Grande and Gila) were flowing ash and debris.
- NEPA process is slow. Design our tool to speed that up, to approve faster forest restoration.

URGENCY - Concerns

- Of all the material that needs to come out for forest resiliency restoration, **traditional lumber markets = 30% of the wood**. 70% has no significant market value except for biomass energy projects. Communities are already choking on that 70%.
- Estimated full cost of wildfires \$360,000,000 Per YEAR AVERAGE (suppression = about 8%) and **aftermath = 92% = \$331,200,000 Average per year!** (e.g. lost property values, lost tourism, silted lakes, lost watersheds, lost Gross Receipts Tax, etc.)

URGENCY - Concerns

- In NM's last 10 years, 5 of the largest fire years EVER have occurred. Loss of homes, eroding of tax base, loss of the water from watersheds, debris silting in lakes.
- Plus just in general...Depressed economy, strained budgets.

URGENCY - Concerns

- A forester in Colorado says that the now- longer, warmer seasons, means that trees are growing faster/more per season.
 - Each tree uses more water.
 - Watershed implications – less water goes downstream
 - There is more waste wood or “woody biomass” to clear over time.

URGENCY - Opportunities

- Bioenergy technologies have become commercially “proven” in the last months / year. SEE HANDOUT
- “Window of Opportunity” to create locals’ determined NM bio-energy industry. **New Mexicans determine:**
 - How much of Profits stay local
 - Thinning – when to stop
 - Local jobs
- Out-of-State companies are already here. Deep pockets to do biomass assessments. **AND they decide:**
 - How many **profits leave** the state?
 - When and where to **stop cutting** or not?
 - **Jobs offered to out-of-state folks?**

For New Mexicans to create...

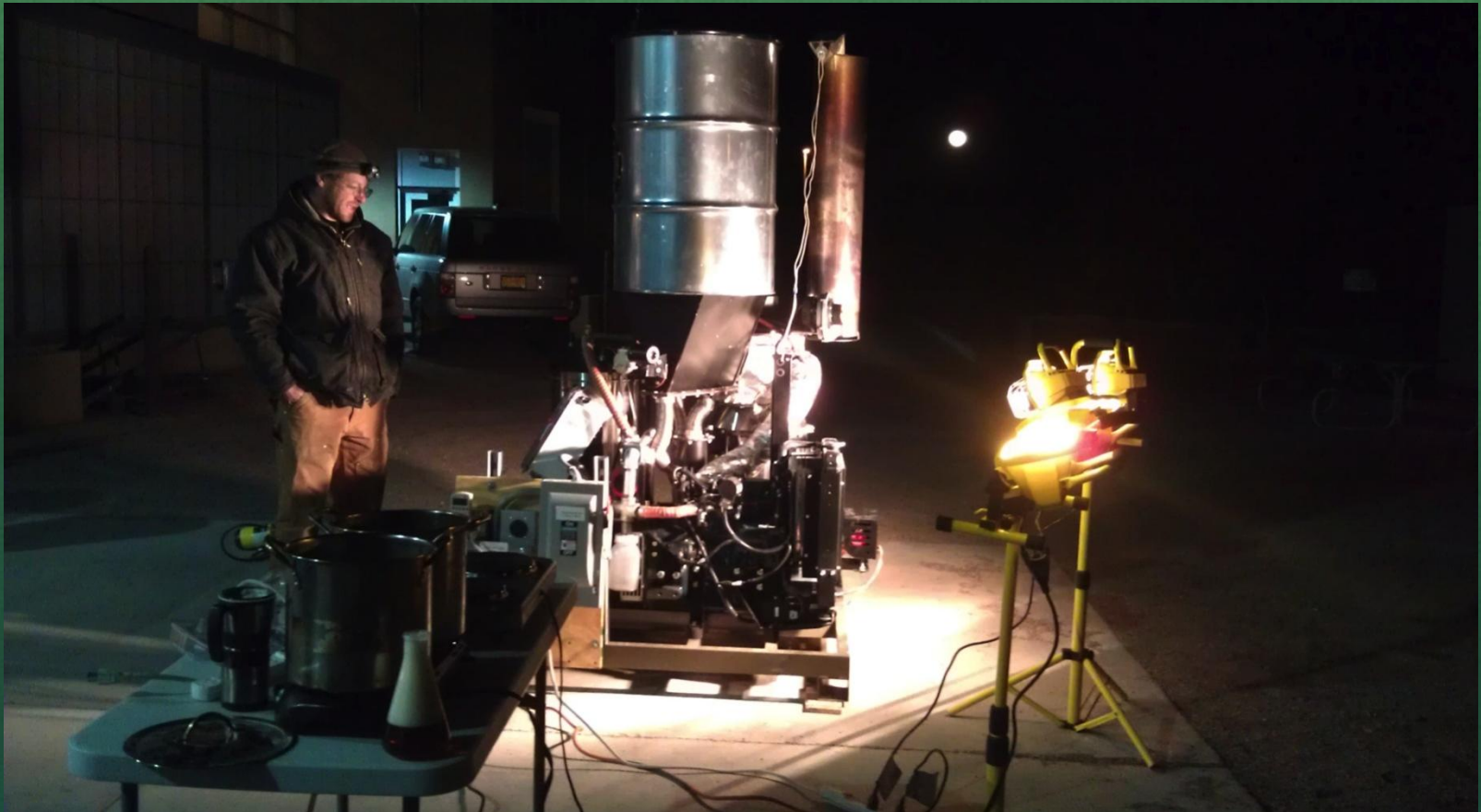
- High Value Energy Products:
 - Heat / Refrigeration
 - Electricity
 - Ethanol
 - Chemicals
- **RECENTLY COMMERCIALY**
AVAILABLE at many different
SCALES... small to large...



10 to 20
kW

*gasifier
fits on a card-
table sized
pallet.
Portable on a
pick-up truck.*

Gasifier at work at SFCC



Gasifier 100kW



SFCC Biomass Heating System



January 2008. A biomass heating system that meets 85% of the college's peak heating demand by burning wood chips acquired from forest-thinning projects is fired up for the first time.

SFCC Biomass Heating System



OK... & the other products we usually think of...

- Firewood
- Mulch
- Compost
- Vigas / Latillas
- Watershed berming and restoration
- Mushroom substrate
- Wildlife habitat

Liability = Taxes
Asset = Jobs \$

- Less than the cost of fighting **one day** of a catastrophic forest fire in New Mexico (\$3 to \$5 million per day) **TAXES**
- **\$50 million / year for 40 years**
Brent Racher's estimate to thin to protect our forests / urban interface...**TAXES**

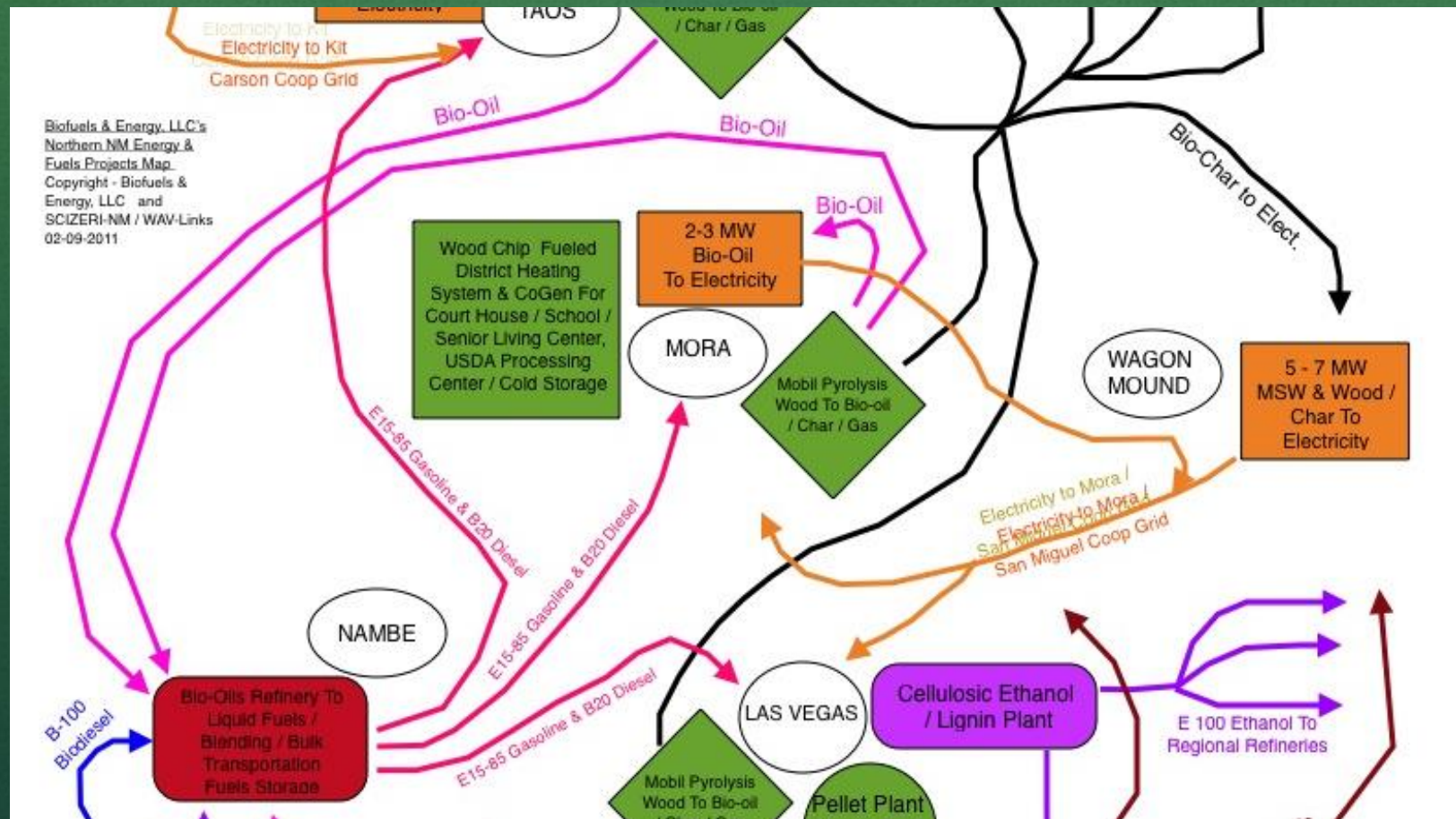
CONTRAST COSTS / JOBS

- \$360,000,000 per year **TAXES & LOSSES**
- What if we could turn that around for only \$1.8 million?
- \$17,500,000 per year in **JOBS**

Conservative Estimate

in 5 years: 500 jobs

Direct, Indirect, Induced



Economic Development

JOBS! Profits!

- JOBS ESTIMATE - based on Direct Jobs
 - Direct
 - Indirect – supportive jobs increase
 - Induced – restaurants
- 500 jobs by year 5 after Gateway Tool is being used
- \$35,000 / year per job
- \$17,500,000 **per year** in new jobs!
- Gross receipts tax? Increasing land values? Other benefits....

How would this help New Mexicans?

- Land Manager
- Facilities Operator / Manager
- Private Land Owner
- Biomass Energy Company Developer
- Guy with a chain saw and a truck
- Student
- Food Producer / Heat Greenhouses

We have incredible partners.....

- Sustainable Communities ZERI NM, Inc.
- And an awesome Advisory Council
- Trust for Public Land – National GIS
Director – Breece Robertson
- NM Forest Industry Association
- Brent Racher – Racher Resource Mgmt.
- Foresters: Ralph Barela – Barela Timber
Mgmt
- Kent Reid - Highlands University's NM
Forest & Watershed Restoration Institute
- AFE Advisor - Jason San Souci
- RCAC: Rural Communities Assistance
Corp. – Ellen Drew

Other Partners

Collaborative Visions, Mora, NM

And about 700 more...

Why only \$1.8 million?

- Statewide APP – Satellite Imagery
- Offered for free to New Mexicans
- State land, Private land, Federal lands
- **OUR PARTNERS TELL US** this is an essential missing piece to the rapid growth of a bio-based renewable energy sector in our State.

Credible Support....

Congressional Delegation

- Senator Tom Udall at the lead...
- Found Federal and Foundation sources of funding
- Before “Sequestration”
- Their funding sources now appear nearly impossible... so...
- State funding is making better sense...

More doors are opening...

- Economic Development Cabinet Secretary Jon Barela meeting December 9th to see if they would be interested in HOSTING our project
- Asking support
 - Environment Department
 - Energy, Minerals & Natural Resources Department

Inspired to help get this done?

What you can do now...

- Read our handout...
- *Sponsor and support this Legislation...*
- *The Gateway Technology = The App = The Bankable Woody Biomass Assessment Tool*

Questions?

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